



TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

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3rd December 2015
Our Ref: TOHA/15/6520/1/SS
Your Ref: T5121/15014

Dear Sirs

Bridgewater Road, QEOP

Imported Soil Analysis – Allotment Topsoil

We have completed the analysis of the *Allotment Topsoil* samples collected from the Bridgewater Road, Queen Elizabeth Olympic Park site and have pleasure reporting our findings.

The purpose of the analysis was to determine the samples' compliance with the requirements of 2.6 *Materials Selection – Allotment Topsoil* as listed in the T Loughman & Co Ltd Inspection & Test Plan – *Remediation, Bulk Excavation and Fill ITP, Olympic South Park* (ref: 15/014/12 ITP 01). The results for potential contaminants have been assessed against the Atkins *Site-Specific Assessment Criteria (SSACs) – Human Health Separation Layer for Zone PDZ8/CZ8c, Allotments*.

Sampling

The allotment topsoil was examined and sampled at the Bridgewater Road Allotment site, Queen Elizabeth Olympic Park on 17/11/2015 by Tim O'Hare Associates LLP (TOHA). It is understood that the topsoil was originally supplied by London Rock Supplies Ltd.

At the time of TOHA's visit, the allotment topsoil had been placed across the allotment area. Topsoil was sampled from a total of 6 no. trial holes, using a spade and hand-driven soil auger. The locations of each trial hole are indicated on the attached site plan.

The topsoil at each location was consistent in visual appearance and described as:

Brown (Munsell Colour 10YR 4/3), slightly moist, friable SANDY LOAM with a well developed fine to coarse granular, and occasional sub-rounded blocky, structure. The soil was slightly stony, containing frequent small to medium sized stones including flints. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

A total of 2 No. representative samples were taken from these trial holes to undergo laboratory analysis.

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Plate 1: Allotment Topsoil



Plate 2: Typical trial hole

ANALYTICAL SCHEDULE

The samples were submitted to the laboratory for a range of physical and chemical analyses in accordance with the requirements of the specification. The following parameters were determined:

- Visual examination to record Munsell colour, moisture status, aerobic state, the presence of any deleterious materials, unusual odours (e.g. petroleum hydrocarbons);
- detailed particle size analysis;
- stone content (>2mm, >20mm, >50mm);
- visible contaminants (>2mm) (of which glass/sharps or plastic);
- pH value;
- calcium carbonate;
- electrical conductivity values (water and CaSO_4 extracts);
- exchangeable sodium percentage;
- organic matter content;
- total nitrogen;
- carbon:nitrogen ratio;
- extractable phosphorus, potassium and magnesium;
- phytotoxic contaminants (Cu, Ni, Zn);
- water-soluble boron;
- Limiting values for harm to human health (ref: SSACs);

The results of this process are presented on the attached Certificate of Analysis, and a summary of our findings is provided below.

RESULTS OF ANALYSIS

We have cross-referenced the results against the requirements of 2.6 *Materials Selection – Allotment Topsoil – Remediation, Bulk Excavation and Fill ITP, Olympic South Park* (ref: 15/014/12 ITP 01) and the *Site-Specific Assessment Criteria (SSACs) for Zone PDZ8/CZ8c*.

Horticultural Parameters

The samples were largely compliant with the requirements of 2.6 *Materials Selection – Allotment Topsoil*, with the exception of the following parameters:

Parameter	Result	Specified Requirement
Clay content	13% - <i>Samples 1 & 2</i>	15-25%
Stones (>2mm)	22-23% - <i>Samples 1 & 2</i>	<20%
Organic Matter	3.6% - <i>Sample 1</i>	4.0-8.0%
Total Nitrogen	0.16% - <i>Sample 1</i>	>0.20%
Extractable Potassium	197 mg/l – <i>Sample 1</i>	240-1200 mg/l

These non-compliances are only considered minor when reviewed in the context of all the other results and considering the proposed end-use of this topsoil. They should not adversely affect the overall quality and function of the topsoil for the proposed end-use.

Although not essential, the nutrient levels of the topsoil could be raised slightly by applying a compound, slow release fertiliser to the surface (eg. *Everris Enmag CRF* (11%N:22%P₂O₅:9%K₂O:6%MgO) at a rate of 70 g/m²).

Chemical Parameters – SSACs

Of the potential contaminants determined, none were recorded at levels that exceeded their respective specified maximum permissible values.

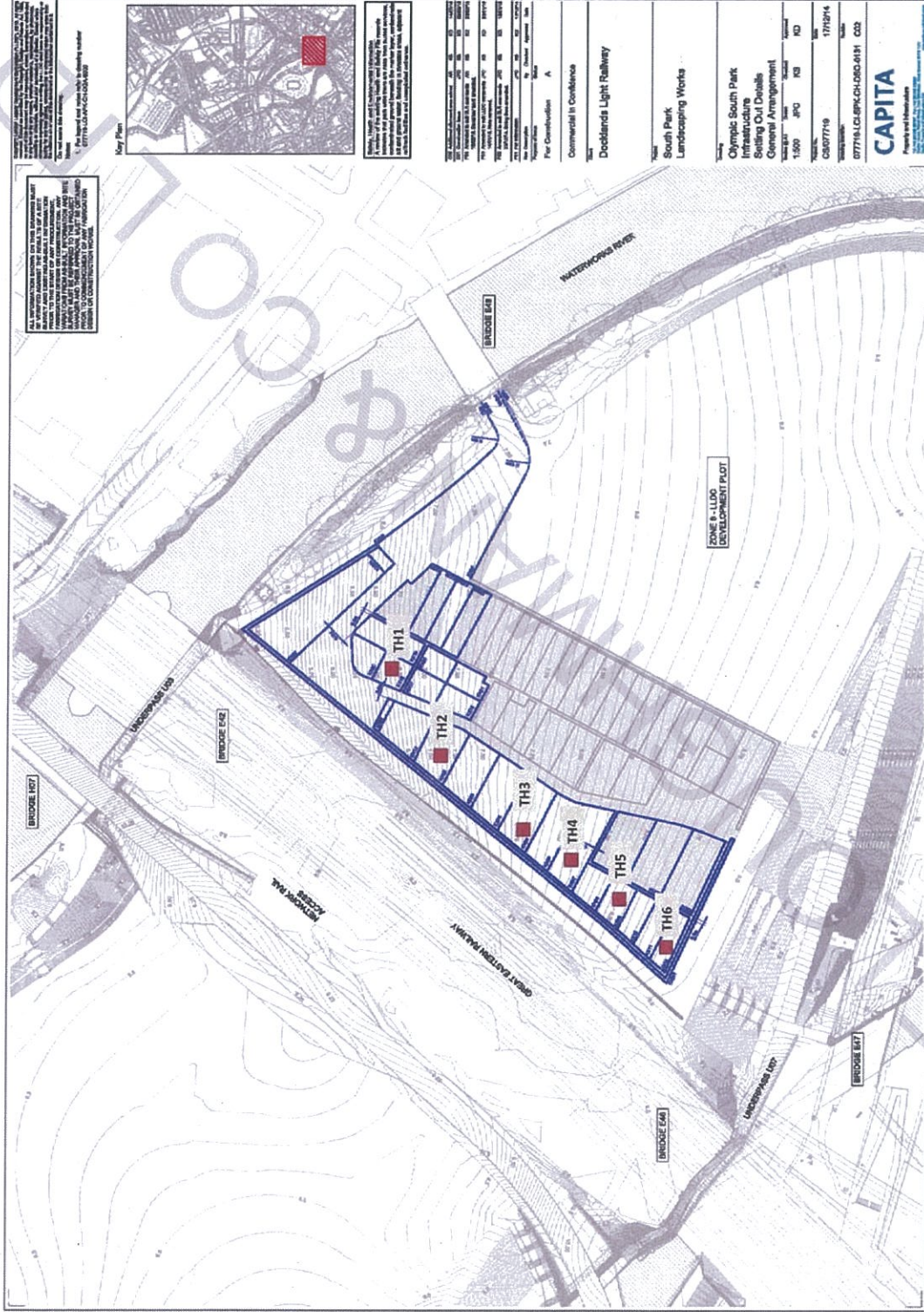
We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours faithfully,

BSc MSc MISOilSci MBIAC CSci
Principal Consultant

For & on behalf of Tim O'Hare Associates LLP

THx Approximate Trial Hole location



TIM O'HARE ASSOCIATES
SON & LANDSCAPE CONSULTANCY

Client:	
Project:	Bridgewater Road
Job ref:	TOHA/15/6520/1/SS
Drawing no.:	6520/1
Drawing title:	Allotment Topsoil Validation
Date:	Nov '15
Drawn by:	IG
Scale:	NTS
Checked by:	TOH

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